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ROSE CHEMICALS SITE
REMOVAL CLOSING REPORT

September, 1989

CLEAN SITES, INC.

ROSE CHEMICALS SITE

REMOVAL CLOSING REPORT

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has issued two Administrative Orders on Consent for the Rose Chemicals Site, 86-F-0019 (AO1) and 87-F-0007 (AO2). The small amount of PCB removal work performed under AO1 was completed prior to the removal activities under AO2. This report describes the removal activities under AO2.

This phase of the removal of PCB-contaminated materials and soil from the site began on February 11, 1988 and was completed on October 4, 1988. This report documents the work done during that eight-month period.

This phase of the removal was carried out under AO2 between EPA, Region VII (EPA) and the Rose Chemicals Steering Committee. The Scope of AO2 was: (1) to initiate and complete the removal of PCBs and PCB items from the Holden facility to EPA authorized disposal facilities and (2) to fully determine the nature and extent of releases or threats of releases of remaining hazardous substances, including PCBs, into the environment. The Remedial Investigation (RI) and the subsequent Feasibility Study (FS), collectively referred to as RI/FS, is currently underway.

This report is in partial fulfillment of Article 6 of the Statement of Work, which is Attachment A to AO2. Article 6 specifies that "respondent shall submit in writing to EPA certification of the completion of all activities called for by the Statement of Work. Accompanying this certification, the respondent shall submit a final report which shall include a detailed description of all work performed pursuant to the Statement of Work." Until the RI/FS is completed, we cannot provide the completion statement required. However, this report is submitted in partial fulfillment of this requirement, since it will be a detailed description of the Removal Phase of the Work. Once the RI/FS has been completed and the EPA-returned material has been removed from the site, the rest of the completion certification will be submitted to the EPA.

I. MAIN REMOVAL

A. SCOPE OF WORK

The work to be done is described in general terms in the Statement of Work attached to the Consent Decree. In broad terms, the work was to remove the PCB-contaminated materials located inside the Main Warehouse and the South Warehouse on the Rose Site. Contaminated liquid stored in bulk tanks outside the buildings was to be removed along with the tanks themselves. (PCB-contaminated soils removal will be addressed in Part III of this report.) For the main removal, the work consisted of five items.

1. Inventory

A detailed inventory of the contents of the warehouses was conducted by Chemical Waste Management (CWM) under Phase 1 (A01) of the Rose activities. This work has been described in the Phase 1 Closeout Report which was presented to the U.S. EPA in October 1987 and approved on . This inventory provided the basis for the competitive bids, which were used to select the Phase 2 (A02) Removal Contractor.

2. Selection of Contractor

Clean Sites used a competitive bidding system to select the contractor for the removal work. Requests for Proposals were prepared and submitted to a bid slate which had been endorsed by the Technical Subcommittee of the Rose Steering Committee. The contractors visited the site to evaluate the scope of the job and then submitted sealed bids for the work. The bids were based on a unit price concept, i.e. bids were in terms of X cents per pound for roughly 16 different categories of material. Bid evaluation was based on the quantities of materials taken from the CWM inventory. Bidders were required to specify the disposal sites which they intended to use for the removal and only EPA-approved disposal sites were allowed. Based on evaluation of the bids by Clean Sites and the Technical Subcommittee, Rollins Environmental Services (RES) was selected to do the job and was approved by the EPA.

3. Destinations for the Materials

Contaminated materials were sent to two locations as specified in the Rollins bid. Contaminated liquid, capacitors, and capacitor parts were sent to the Rollins incinerator in Deer Park, Texas. A small quantity of liquid was sent to the Pyrochem (Aptus) incinerator in Coffeyville, Kansas because of a problem in scheduling the use of the Rollins incinerator at one stage of the job. Only six tanker-loads of liquid were sent to the Coffeyville incinerator. All the solid materials, i.e., transformers, scrap metal, tanks, and debris, were sent to the CWM landfill in Emelle, Alabama.

4. On Site Quality Assurance

During the CWM inventory, a careful search was made of the labels on drums and crates to determine the identity of the PRP which shipped the material to the site. Therefore, it was not necessary to repeat this label check during this phase of the removal.

For tracking purposes, Clean Sites needed only to determine accurately weight and material type for each item during the removal. In order to accomplish this task a computerized recordkeeping system was used. As each item was removed from the warehouse, it was placed on a digital scale and weighed. The weight was recorded along with the CWM article number and material type in the portable computers inside the warehouse. On a daily basis, the information from the portable computers was dumped into the Rollins main computer in their trailer at the site. This information provided the basis for billing and manifesting the material before it left the site. Rollins provided the data to Clean Sites which kept a separate record of the material on the Clean Sites computer. Removal weights were compared to the CWM weights as a check of the accuracy of weighing during the removal operation. However, the removal weights are the controlling weights in all cases.

Clean Sites' construction supervisor monitored the weighing and loading operation and made spot checks of each truck load to ensure accurate weights were recorded.

In addition to the inventory described above, certain articles of interest to the FBI for criminal enforcement activities were identified. During the weighing operation, the computer "flagged" any article which had been placed on a list of articles of interest to the FBI (FBI List). Those items were set aside for photographing (see IV A. below).

5. Ensuring Proper Disposal

Rollins was required to provide a manifest for each load of materials which left the site. Manifests were prepared by Rollins, then checked and signed by Clean Sites on behalf of the Rose Bankruptcy Trustee, before the load left.

Rollins was also required to provide Certificates of Destruction or Certificates of Disposal (CDs) for each load of materials which left the site. As specified in the AO2, those CDs were required to be received within sixty (60) days of the departure of the material from the site. In all cases, Clean Sites did receive CDs within the 60 day period. A complete copy of all manifests and CDs has been prepared and is attached to this report as Attachment A.

B. RESULTS OF MAIN REMOVAL

1. Removal Quantities Compared to Inventory

Table 1 is a timeline report which summarizes the nine categories of material removed from the site. This report shows on a week-by-week basis the number of truckloads of material which left the site. The table is largely self-explanatory. The category "flush liquid" refers to the diesel fuel which was used to flush the transformers for 18 hours prior to shipment.

10-Aug-89
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TABLE 1

AO2 REMOVAL
TIMELINE SUMMARY

	3/08			4/04					5/09					6/13					7/18					8/22					9/26								
WEEK # ->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	LOADS PER MAT. TYPE	ACTUAL WT 9/01/89	INV. WT	DELTA	
MAT. TYPE																																					
BULK DEBRIS *	0	0	0	0	0	0	0	3	2	0	0.10	0	0	0	0	0	0	0	0	5	0.1	4	11	8	6	0	1	0	7	2	0	***	73.20	2,151,096	497,750	1,653,346	
CRUSHED DRUMS	0	0	0	0	0	1	2	1	0	0.75	0.90	1	0	1	1	0	0	0	0	0	0	0	0	0	***	***	***	***	***	***	***	***	8.65	335,280	392,185	(56,905)	
CONT. DEBRIS **	0	0	0	0	4	16	3.3	1	0	0	0	0	0	1.9	0	0	1.6	0	0.1	0.25	2.6	1	0.75	0	***	***	***	***	***	***	***	***	32.50	1,462,184	1,386,200	75,984	
TRANSFORMERS	0	0	0	0	0	0	6.7	0	4	0.25	0	2	3	0.1	2	1	3.4	1	6.9	11.75	2.3	2	0.25	0	***	***	***	***	***	***	***	***	46.65	1,922,270	1,677,544	244,726	
BULK RES	0	2	4	3	1	2	3	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.25	2	0	0	0	2	***	***	30.25	1,462,090	2,933,367		
LIQUID APTUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	***	***	***	***	***	***	***	***	5.00	1,520,660	.....	123,953	
LIQUID RES (DRUMMED)	0	0	0	0	0	0	0	0	0	5	0	4	3	5	2	1	2	0	4	4	2	0	4.3	4	1.75	***	***	***	***	***	***	***	42.05	1,470,460	1,605,459	(126,999)	
																									***	***	***	***	***	***	***	***					
LIQUID RES (FLUSH)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	0	0	***	***	***	***	***	***	***	***	6.00	249,180	700,000	(450,820)	
																									***	***	***	***	***	***	***	***					
LIQUID RES (TRANSFORMER)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0.7	1	***	***	***	***	***	***	***	***	4.70	202,820	388,000	(185,180)	
CAPS (WHOLE, PARTS,& CORES)	25	19	20	24	6	0	0	3	1	1	0	2	1	0	1	0	1	0	0	0	0.25	0.25	0.25	0	***	***	***	***	***	***	***	***	104.75	4,445,577	3,913,127 INC. CRATES	532,450	
																									***	***	***	***	***	***	***	***					
SLUDGE	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0.75	0.75	1.75	2	0	0	0	0	2				11.25	402,920	182,346	220,574	
																									***	***	***	***	***	***	***	***					
TANKS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	3	11	2	4	8	5	***	***	***	33.00	500,940	500,000	940	
																									***	***	***	***	***	***	***	***					
TOTAL LOADS PER WK	25	21	24	27	11	19	15	11	12	7	1	10	9	8	7	3	10	5	12	25	18	8	19	18	22	12	5	8	14	4	8	0	398.00	16,133,477	14,175,978	2,032,069	
																																		1,303,000 PYROCHEM REMOVAL			
																																		14,830,477 ROLLINS REMOVAL LESS DIRT			
WEEK # ->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32					

73 TOTAL BULK DEBRIS LOADS TO EMELLE
9 TOTAL CRUSHED DRUM LOADS TO EMELLE
33 TOTAL CONTAINERIZED BULK DEBRIS LOADS TO EMELLE
47 TOTAL TRANSFORMER LOADS TO EMELLE
30 TOTAL BULK LIQ TO DP TX
5 TOTAL BULK LIQ TO APTUS
42 TOTAL DRUMMED LIQ TO DP TX
6 TOTAL FLUSH LIQ TO DP TX
5 TOTAL TRANSFORMER LIQ TO DP TX
105 TOTAL CAPS & PARTS TO DP TX
11 TOTAL SLUDGE TO DP TX
33 TOTAL TANK LOADS TO EMELLE
==========
398 TOTAL LOADS OFF SITE

CHECK	398
	0.00

* = BULK DEBRIS NOT CONTAINERIZED ON TRUCKS
** = INCLUDES SOME DEBRIS CONTAINERIZED BY RES
*** = SHOULD BE NO MORE LOADS

AVERAGE WT. PER TRUCK THRU THE END OF WK 32
37263 LB.

TABLE 1 (Continued)

AO 2 REMOVAL

TIMELINE SUMMARY

10-Aug-89 TIMELINE

MAT. TYPE	WEEK #	8/22 - 25	26	27	28	29	9/26 30	31	32	LOADS PER MAT. TYPE	ACTUAL W INV. WT 9/01/88	DELTA	%
DIRT		0	6	16	6	18	27	8	1		3,603,280 2,200,000	1,403,280	39
TOTAL LOADS PER WK		0	6	16	6	18	27	8	1	82.00		1,403,280	

AVERAGE WT. PER LOAD
43942 LBS

The cumulative material weights are shown at the right of the table labeled "actual weight". That weight is compared to the weight in the CWM inventory labeled "inv. wt". The difference between these two numbers is shown as delta pounds and finally delta percent. While there are significant differences in individual categories, the overall comparison between the amount of material actually weighed and the inventory estimate is judged to be acceptable at +13%.

A floppy disk containing the detailed removal log was supplied to EPA in early January, 1989.

Regarding water filtration and disposal, the large pit in the Main Building was roughly 6-7 feet deep, containing approximately 60,000 gallons of water. After obtaining approval of EPA and the Missouri DNR, the water in the pit was pumped through an activated charcoal adsorption system, analyzed, and then dispersed on the site. Results of the analysis are shown in Table 2. In all cases, PCB content in the finally treated effluent was below the detection limit. The purified water was piped to the northwest part of the site where it was dispersed through perforated plastic hose (sprinkler hose).

2. Emergency Responses and Spills

a. Emergency Response Action

There was no emergency response action taken during the removal operation.

TABLE 2

WATER TREATMENT PCB ANALYTICAL RESULTS

Sample No.	Location	Date Sampled	Customer Sample No.	Analytical Results (ppb)*
1	Filter Intermediate	6/6/88	RCS.ES-100-75	ND
2	Filter Intermediate	6/10/88	RCS.ES-109-75	0.5
3	Filter Outlet	6/10/88	RCS.ES-110-75	ND
4	Filter Outlet	6/14/88	RCS.ES-134-75	ND
5	Filter Outlet	6/21/88	RCS.ES-136-75	ND
6	Filter Outlet	6/27/88	RCS.ES-147-75	ND
7	Filter Outlet	6/27/88	RCS.ES-148-75	ND
8	Filter Outlet	6/27/88	RCS.ES-149-75	ND
9	Filter Outlet	6/27/88	RCS.ES-150-75	ND
10	Filter Outlet	7/8/88	RCS.ES-157-75	ND

*** ND - Non Detectable**

b. Reportable Spills

Attachment B shows a printout from the EPA of all spills reported in Holden, Missouri from 1981 to the present. Only four of these spills occurred during the removal operation. Clean Sites adopted a conservative approach in reporting spills, that is, any spill was reported regardless of the volume. In several cases, this meant reporting spills of one gallon or less of PCB liquid. In all cases, the material was immediately adsorbed with oil dry and then cleaned with the appropriate solvent. The most serious spill occurred on September 19, 1988. A piece of the Rose process equipment was being moved to the loading dock. Its base was punctured by the forklift and liquid which had filled the base leaked onto the warehouse floor. Approximately 30 gallons of contaminated oil was spilled. All the material was adsorbed and picked up in an approved manner and placed in storage for disposal.

c. Bomb Threat

On the evening of June 15, 1988, a security guard received a phone call threatening to set off a bomb at the site. The guard notified the local police and Clean Sites. Clean Sites notified the FBI, the EPA, Clean Sites Management in Alexandria, and Rollins. Inspection of the site the next day found nothing suspicious, and no followup calls were ever made. The FBI took the threat seriously, however, and placed monitors on the telephones at the site for a one month period.

3. Modifications to Buildings and Site

a. Buildings

The Main Warehouse superstructure was basically unchanged during the removal. However, the office partitions within the building were removed. Air conditioning units in the walls of the building were removed which created a number of holes in the walls. The side of the South Warehouse was temporarily removed in order to remove the large tanks in that building. Part of the west side of the Main Warehouse was temporarily removed to pull out the large storage tanks in the pit. Those walls were replaced after the tanks had been pulled out.

b. Road and Wheel Washer

A small quantity of gravel was placed on the site to upgrade the road to enable the tankers and vans to move around the site. A wheel washer was installed at the entrance to the American Steel building (the eastern part of the Main Warehouse). The wheel washer consisted of a metal trough roughly twelve feet long and six inches deep. Each truck which left the interior of the building rolled through the wheel washer where all dust was washed off and into the wheel washer. That water was subsequently pumped into the swimming pool storage (which had been set up in Phase 1 to handle decontamination water) and then through the charcoal adsorption system.

c. Septic Tanks

The Rose site was not permitted to use the local sewer system, consequently sewage tanks were installed at the site to provide sanitary services. These holding tanks were pumped out weekly. These tanks remain on the site at present. They will be removed once the remedial action has been completed.

d. Bankruptcy Trustee Material

The Bankruptcy Trustee identified sixteen items at the site which he felt might be of some value. This material was segregated from the rest of the material. However, later review by the Trustee resulted in his decision that the cost of decontamination would approximately equal the expected value of the material. Therefore, he ultimately released that material to Clean Sites for removal with the rest of the items.

4. Resulting Condition of the Site

After the removal was completed on October 10, 1988, the Main Warehouse was empty with several exceptions.

a. EPA Returned Material

From 200,000 to 250,000 pounds of material had been returned to the Rose Site by the EPA shortly after Rose Chemicals declared bankruptcy. This material, consisting of forklifts, electric motors and other items of equipment which CAP alleged had belonged to Rose Chemicals, is still at the site. Included in this inventory is a large boat outside the South Warehouse and a 1931 Bentley inside the South Warehouse.

b. Crane

The overhead crane in the American Steel building remains in that building. The crane is in good working order and was used to lift the heavy transformers during the removal operation.

c. Building Slab and Pit

The slab of the Main Warehouse is cracked but intact. It appears to be highly contaminated in places with PCBs and some volatile organic material. The sump in the large pit was plugged with concrete after the water was removed. The pit still leaks slightly but periodic pumping keeps it essentially dry.

d. South Warehouse

The South Warehouse is empty except for the 1931 Bentley which is a part of the EPA returned material.

II. EARLY LIQUID REMOVAL

The early removal of liquid from the site began on July 27, 1987. It continued through December 7, 1987. That removal was partially reported in the Closeout Report for AO1. Table 3 is the complete summary for the early liquids removal. That summary shows that a total of 1,303,740 pounds was removed during that operation. All of this liquid was taken to the Pyrochem Incinerator in Coffeyville, Kansas where it was incinerated.

A complete set of Manifests and Certificates of Destruction are included in Attachment A to this report.

III. SOIL REMOVAL

A. REMOVAL PLAN

As reported in the AO1 Closeout Report, a Soil Sampling Program was conducted by CWM during March, April and May in 1987. Figure 1 shows the results of that sampling program. The Rose Steering Committee elected to remove soil from the grid blocks which showed PCB concentrations greater than 10 ppm. The Steering Committee elected not to sample after the soil removal had been completed, however, since resampling was to be a part of the remedial investigation. Consequently, the criterion established in the Soil Removal Work Plan was to remove approximately 4-6 inches of soil from the designated grid blocks. If there was visible evidence of staining, additional soil would be removed until no staining was detected. That plan was carried out and completed on October 4, 1988.

B. POND PLAN

There were two small ponds on the Rose property, the eastern of which showed evidence of PCB-contamination in the sediment at the bottom of the pond. Consequently, the water in the eastern pond was pumped to the second or western pond. After that, the sludge in bottom of the eastern pond was excavated and removed.

TABLE 3

MARTHA C. ROSE CHEMICALS, INC. SITE

EARLY LIQUIDS REMOVAL LOG

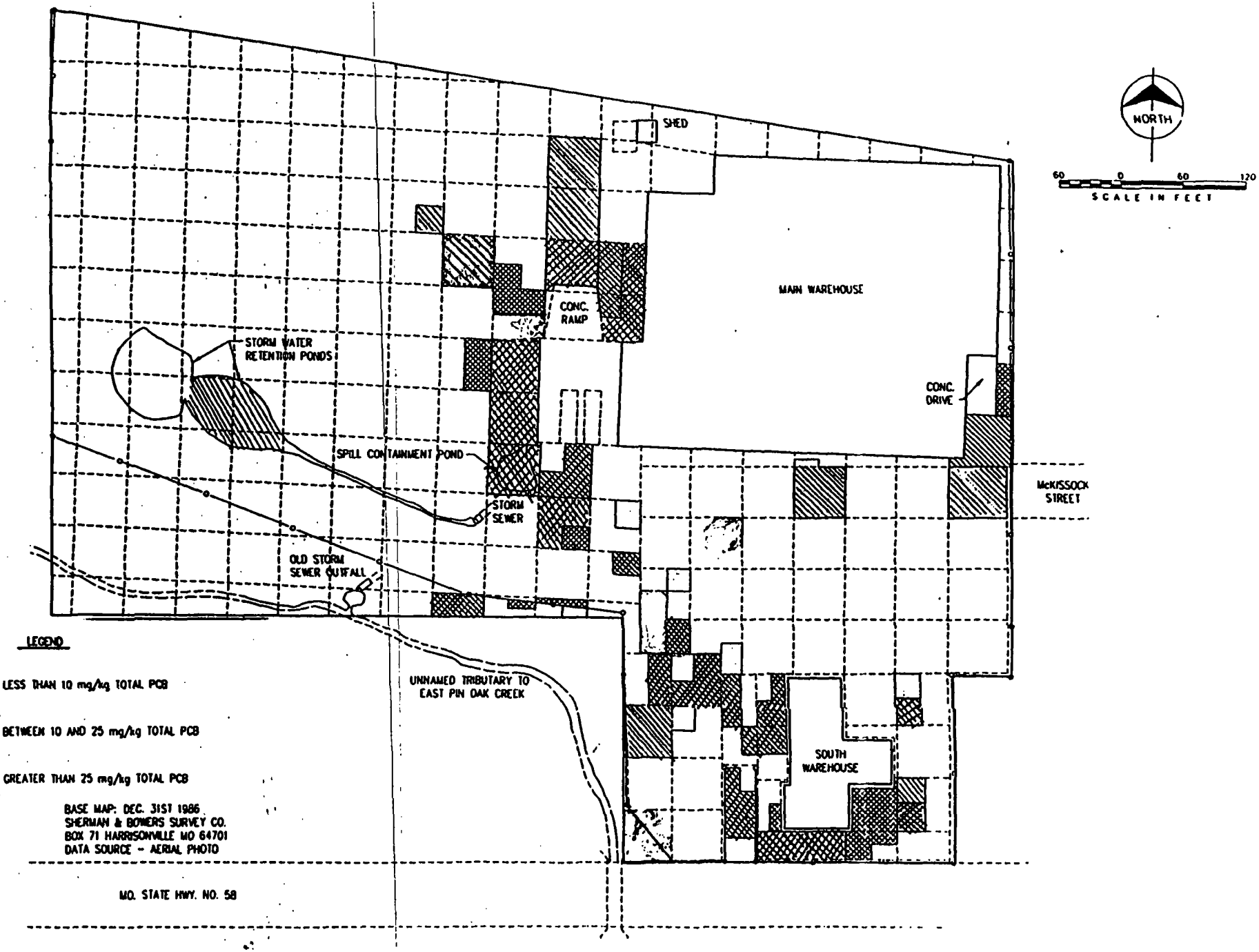
****

DATE	ARTICLE NUMBER	MANIFEST NUMBER	CERT. OF DISPOSAL	WEIGHT NET	SP.GR.	VOLUME GAL.
07/27/87	20024	6951T	00775	43,680	1.168	4,489
07/28/87	20048	6954T	00784	36,360	0.881	4,955
08/04/87	20024	7172T	00841	36,420	1.060	4,125
08/06/87	20024	7173T	00855	37,520	1.030	4,373
08/10/87	20024	7208T	00859	9,150	1.210	908
08/10/87	20023	7208T	00859	30,300	1.210	3,006
08/10/87	20023	7209T	00866	43,250	1.110	4,678
08/20/87	20023	7210T	00881	17,245	0.897	2,308
08/20/87	20022	7210T	00881	20,075	0.897	2,687
08/20/87	20022	7211T	00882	31,770	0.867	4,399
08/26/87	20022	7212T	00940	20,409	0.875	2,800
08/26/87	20025	7212T	00940	15,621	0.875	2,143
08/26/87	20025	7282T	00897	33,840	0.873	4,653
09/01/87	20025	7283T	00951	36,840	0.870	5,083
09/01/87	20025	7482T	00917	8,697	0.970	1,076
09/01/87	20021	7482T	00917	26,653	0.970	3,299
09/10/87	20021	7631T	00996	39,400	0.913	5,181
09/10/87	20021	7397T	01001	18,326	0.878	2,506
09/10/87	20048	7397T	01001	24,474	0.878	3,346
09/17/87	20048	7483T	01040	45,770	0.897	6,126
09/17/87	20048	7630T	01002	7,697	0.883	1,046
09/17/87	20046	7630T	01002	35,463	0.883	4,821
09/23/87	20046	7398T	01017	37,440	0.937	4,797
09/23/87	20046	7865T	01066	32,770	0.892	4,410
10/02/87	20047	7755T	01100	37,750	0.887	5,107
10/02/87	20047	7756T	01094	44,220	0.893	5,943
10/08/87	20047	7864T	01110	17,040	0.907	2,255
10/08/87	20041	7864T	01110	16,500	0.907	2,184
10/08/87	20041	7938T	01111	27,530	0.904	3,656
10/16/87	20041	8156T	01143	44,910	0.915	5,892
10/16/87	20041	8157T	01144	34,890	0.900	4,654
10/23/87	20040	7939T	01216	33,710	1.010	4,007
10/23/87	20040	8338T	01209	40,180	1.001	4,819
10/29/87	20040	8359T	01236	39,670	0.948	5,024
10/29/87	20036	8360T	01215	38,820	1.170	3,983
11/06/87	20036	8339T	01281	31,900	1.169	3,276
11/06/87	20048	8617T	01326	23,090	0.965	2,872
11/12/87	20036	8618T	01240	38,150	1.030	4,446
11/12/87	20039	8618T	01240	1,610	1.030	188
11/20/87	20039	8687T	01347	21,210	0.900	2,829
11/20/87	20037	8687T	01347	11,270	0.900	1,503
11/24/87	20037	8686T	01299	35,390	0.880	4,828
12/01/87	20037	8861T	01375	10,730	0.900	1,431
12/01/87	20034	8861T	01375	30,370	0.900	4,051
12/07/87	20034	8862T	01362	35,630	0.872	4,905
		TOTAL		1,303,740		165,068

mat. incin. by Pyrochem 11/06/87 thru 12/07/87 not shown in phase I closeout report

FIGURE 1

GRAPHICAL SOIL SAMPLING RESULTS



C. QUANTITIES REMOVED

Table 1 (page 6) shows a summary of the quantities of soil removed from each block on the site from weeks 25-32. A total of 3.6 million pounds was removed during that period. Copies of the Manifests and Certificates of Disposal are shown as Attachment A to this report. All soils were transported in covered dump trucks to the CWM landfill in Emelle, Alabama.

D. BURIED OBJECT REMOVAL

During the drilling of the first monitoring wells at the site, John Mathes & Associates encountered a metal object during the drilling of monitoring well 108. At the time a ground penetrating radar survey indicated several other "blips" which could have been buried drums. At the time it was decided to wait until the main removal to address the problem of digging up these unknown metal objects. During the soil removal, the area in question was carefully excavated by a worker wearing level B protection. The result of this excavation indicated that there was a small amount of scrap metal in the area, but no drums or any other indication of buried containers of liquid. In an adjacent area, however, we found a "double drum" cylinder approximately six feet long containing what appeared to be charcoal. Apparently this charcoal filter had been placed in such a way that rain water draining from the berm adjacent to the west end of the building would flow through it.

E. RESULTING CONDITION OF SITE OUTSIDE BUILDINGS

All the visually stained soil at the site has been removed along with soil from the grids which indicated concentrations greater than 10 ppm. However, no sampling was done after the Soil Removal Program had been completed. Therefore, it was not possible to ascertain whether or not the program had been successful in reducing the PCB concentrations to below 10 ppm. That determination will be done as part of the RI.

All debris was removed during the removal program. This included a car, 2 tanks, a flatbed truck, 2 flatbed trailers, and a van, along with a considerable amount of scrap metal. In addition, a large pile of tree roots, limbs and debris outside the fence to the south was removed from the site. All of this material was shipped under manifest to the CWM landfill.

A third pond was dug to ensure that rainwater would be contained onsite.

IV. OTHER WORK

A. FBI ACTIVITY

At the request of the FBI, Clean Sites assisted Special Agent Jane Mason and her associates in photographing certain items prior to removal from the site. Attachment C is a letter from Charles L. Owens, Supervisory Special Agent, confirming that the photographic project has been successfully completed. Attachment C also includes a list of items which were photographed.

In order to ensure that the FBI items were set aside and not inadvertently loaded into a truck before being photographed, the computer system was set up to "flag" any item as an FBI item when its article number was punched into the computer. The article was then set aside before weighing until it could be photographed. This system worked well initially. Nevertheless, a number of items slipped through the net. Part of the difficulty appeared to be that there was a period of several weeks during which the FBI was changing the item numbers they wanted to identify. Another part of the problem appeared to be Clean Sites' decision to allow Rollins to weigh the material and set it aside to be held for later photographing. That opened the possibility for the material to be inadvertently loaded later. A detailed review did not provide a definitive answer of how the items escaped the net. Since a large number of items were photographed, the small number that slipped through the net appears to be an unimportant facet of the program.

B. EPA RE-INVENTORY

During November and December of 1987, the EPA requested Clean Sites' assistance in carrying out a complete reinventory of the items in the Main Warehouse. This work was overseen by George Hess and carried out by the EPA's subcontractor, Black & Veatch. The program was successfully completed on December 23, 1987. The purpose of the reinventory, as Clean Sites understands it, was to record certain special numbers painted on the containers and used by Rose Chemicals for inventory and process control.

C. AUDITS

During the removal, Rollins conducted two or three internal audits of their work. These audits focused on safety and also on providing documentation required by their contract with Clean Sites. The audits in general were satisfactory.

D. TECHNICAL SUBCOMMITTEE AUDITS

Clean Sites and members of the Technical Subcommittee conducted two audits of the Rollins incinerator in Deer Park, Texas and one audit of the CWM landfill at Emelle, Alabama. The main purpose of these audits was to ensure that the material sent to those facilities was being or had been disposed of properly and that the Certificates of Destruction or Disposal were valid and accurate. In all cases, the audits gave satisfactory ratings to the facilities.

V. HEALTH AND SAFETY

A. LOST TIME ACCIDENTS

There was one serious lost time accident during the removal operation. A worker was using a pocket knife to puncture the tires on a derelict flatbed before shipping it offsite. Air in the tire caused the knife to be driven in the worker's side to the depth of several inches. Fortunately, the knife missed vital organs and the worker returned to active duty two days after the accident. There were several minor accidents involving sprains and in one case, a worker suffered a mild case of heat exhaustion.

B. AIR AND DUST SAMPLE LOG

Air samples were taken in the Main Warehouse during the entire removal operation. The working air quality was monitored for PCBs, dust, oxygen, % LEL and organics.

The PCB concentrations were always below the OSHA personal exposure limit (PEL) for Aroclor 1242 of 1.0 mg per cubic meter for an 8-hour time weighted average with the highest reading of 0.309 mg per cubic meter on March 19, 1988. No Aroclor 1254 was found. As an added level of personal protection, workers wore cartridge respirators which have a protection factor of 10.

The inert/nuisance dust concentration was also always less than OSHA's standard of 5 mg per cubic meter of respirable air. The highest recorded dust sample was 2.69 mg per cubic meter on September 1, 1988.

Oxygen and % LEL levels were always found to be acceptable, i.e., greater than 19.5% and background or less than 10% respectively.

Organic gases were also measured daily. The highest recorded organics concentration was 3.1 ppm on June 17, 1988. Generally, the higher concentrations of organics in air occurred when there was some exposed petroleum products (usually not containing PCBs) in the vicinity monitored. Organic concentrations in the low ppm range are not necessarily reflective of a hazardous condition since they very likely reflect low level concentrations of non-hazardous organics.

Laboratory analytical results and field monitoring data are shown in Attachments D-1 through D-4.

C. INSPECTIONS

1. Each truck was inspected before it was allowed to leave the site to ensure that it met DOT specifications.

2. Each truck which had gone into the Main Warehouse had its wheels washed before being allowed to leave the site.

D. OSHA INSPECTIONS

OSHA officials inspected the facility on April 13, 1989 and May 11, 1989. Two minor violations were identified, one of which involved a loose electrical cord lying on the floor and the second involving an unlabeled tank of diesel fuel.

VI. COMMUNITY RELATIONS

A. TOWN MEETINGS

Two town meetings were held during the removal program. The first, held on January 26, 1988, was intended to inform the community of the upcoming removal activity. The program was attended by approximately 30 citizens and was generally viewed to be calm and successful. A fact sheet was distributed at the meeting, giving information about the removal program.

The second town meeting was held on October 25, 1988 to report the successful completion of the removal and to describe the next phase of the work: the RI/FS. An even smaller number of citizens turned out for that meeting.

B. FACT SHEETS

Seven fact sheets have been sent out since the inception of the Rose project. A compilation of those fact sheets is included as Attachment E to this report.

C. LOCAL INTERACTION

In general, the citizens of Holden were cooperative and calm during the removal program. A concerted effort was made by Rollins to maintain a low profile in the community during the removal. By and large, workers ate at the site rather than going into town. Workers were carried to the site in a van in the morning and returned to their quarters in a Kansas City suburb in the evening. There was very little interaction with the town people.

On the other hand, Clean Sites visited frequently with the Mayor, other officials, the press, and local citizens to keep them informed.

The actual work on the site also had minimal impact on the town. The removal activities were not noisy. The amount of dust generated was small and during activities which created dust--the soil removal program for example--a water spray was used to minimize the quantities of dust which could have left the site. The one indication of community unrest was the bomb threat but, in retrospect, that did not seem to be a serious threat against Clean Sites or its subcontractor.

VII. ONGOING WORK

As has been previously described, the two warehouses are now empty with the exception of the EPA returned material. The major areas of soil contamination have been removed and the site is secure.

At present, the RI/FS Program is underway. Burns and McDonnell, the RI/FS Contractor, has completed the draft RI report which was submitted to EPA on September 1, 1989. The FS schedule is being adhered to. The FS is expected to be completed by the end of calendar year 1989.

VIII. RECORD RETENTION

In accordance with Article VI. G. of AO1, Page 21, all records associated with the removal will be retained by Clean Sites for a minimum of seven years after the termination of AO2. The records are currently in Clean Sites' office in Holden, Missouri.